

Remarks Monnin et al., 2020

Experimental evolution of virulence and associated traits in a *Drosophila melanogaster* – *Wolbachia* symbiosis

Abstract

- Line 17: why is it important to mention “high rearing temperatures”. Does the infectivity of *Wolbachia* depend on temperature?
- Line 23: what are octomom copies?
- Line 23: to which conditions are referred? You mean high temperature and enforced late reproduction?
- Line 25: are correlated with what? With each other?

Introduction

- Line 34: trade-off. You mention that parasites face a trade-off to maximize their transmission. In the next sentences first a positive correlation is mentioned and then this trade-off is described. For me it was not directly clear what the trade-off was. I think it would be more clear if you directly mention the players in this trade-off before you explain it: “... face a trade-off between the transmission rate and its virulence”.
- Line 45: inter-host and intra-host. Can you explain what you mean with this two types of selection?
- Line 56: I think it would be a good idea to mention here a bit more about what is known about the virulence of *Wolbachia* under different temperatures.

Material and Methods

- Line 99: What is paraquat exactly?
- Line 126: How was the extinction rate calculated? What do you mean with the extinction rate was measured both before and after the last survival measurement (G9)?
- Line 139: “300 µL of AB solution was added” (instead of were added)?
- Line 172: “supplemented with water (control) or paraquat (as described above)” (instead of water, paraquat)?
- Why was generation 9 chosen to compare survival and *Wolbachia* density?
- Is there a reason why specific generations were picked to measure survival (G3 and G9) or density and octomom copy number (G2, G9, G12 and G17)?

Results and discussion

- Line 202 + fig 2a: Is it possible to plot both control and paraquat separately in this figure. I think this figure would be more interesting to show.
- Line 294-295: Inter-host and intra-host selection. For me it is not clear what the different selection pressures are in these two types of selection.

General remarks

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- More information about inter-host and intra-host selection is needed.

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- Experiment is well explained.
- The surprising results are elaborately explained. Multiple possible explanations are formulated and discussed.